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Agency

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1994 and 1995 Toxic Release Inventory

Data Quality Report

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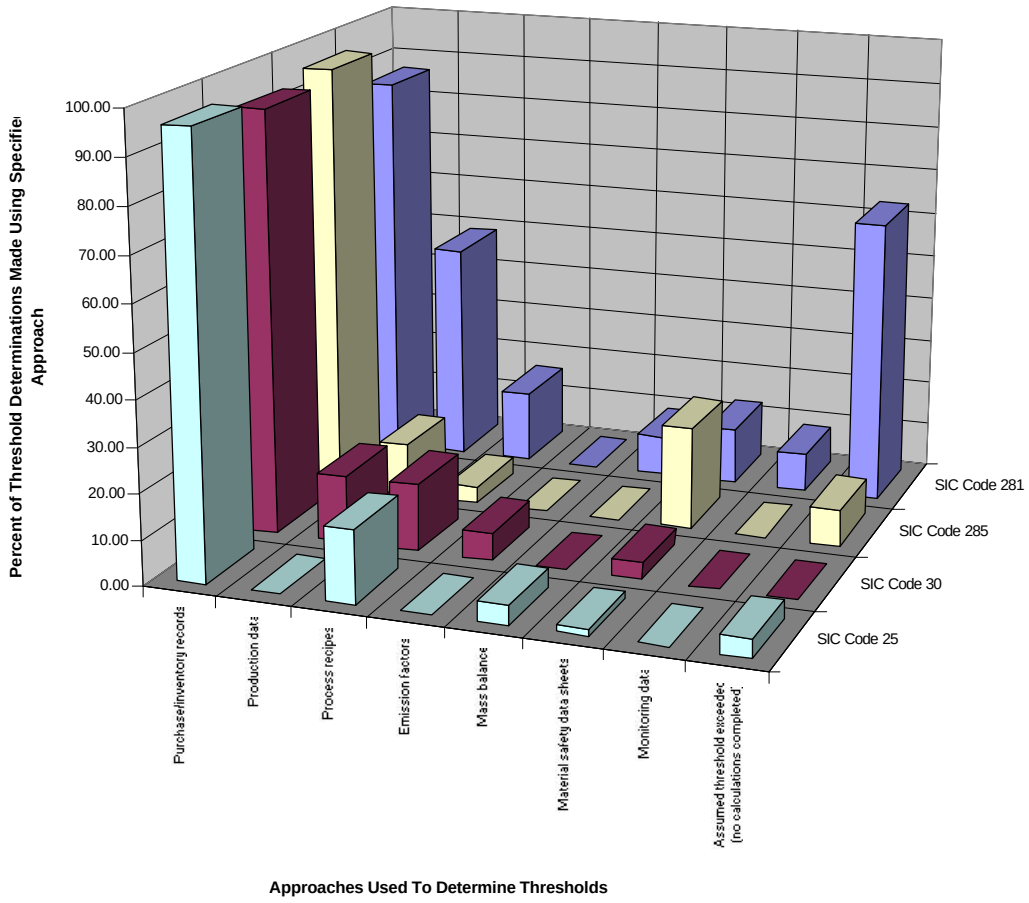
OVERVIEW

As part of a continuing effort to assess and to improve the quality of the data contained in the Toxic Release Inventory (TRI) database, the U.S. Environmental Protection Agency (EPA) conducted TRI data quality site surveys for the reporting years 1987, 1988, 1994, and 1995. The goals for these site surveys were to identify areas in the TRI data collection process that could be improved, to provide a quantitative assessment of the accuracy of the data collected, and to disseminate further guidance on the completion of the TRI forms. The figures in this overview present the significant findings from the site surveys conducted.

This report focuses on surveys completed for reporting years (RY) 1994 and 1995, as previous reports have presented findings from RY 1987 and RY 1988. Site surveys were completed at the following facilities:

- 25 facilities in SIC Code 25, furniture manufacturing, for RY 1994;
- 19 facilities in SIC Code 281, inorganic manufacturing, for RY 1994;
- 17 facilities in SIC Code 285, paint manufacturing, for RY 1994;
- 23 facilities in SIC Code 30, rubber and plastics manufacturing, for RY 1994;
- 10 facilities in SIC Code 26, pulp and paper manufacturing, for RY 1995; and
- 10 facilities in SIC Code 286, organic chemical manufacturing, for RY 1995.

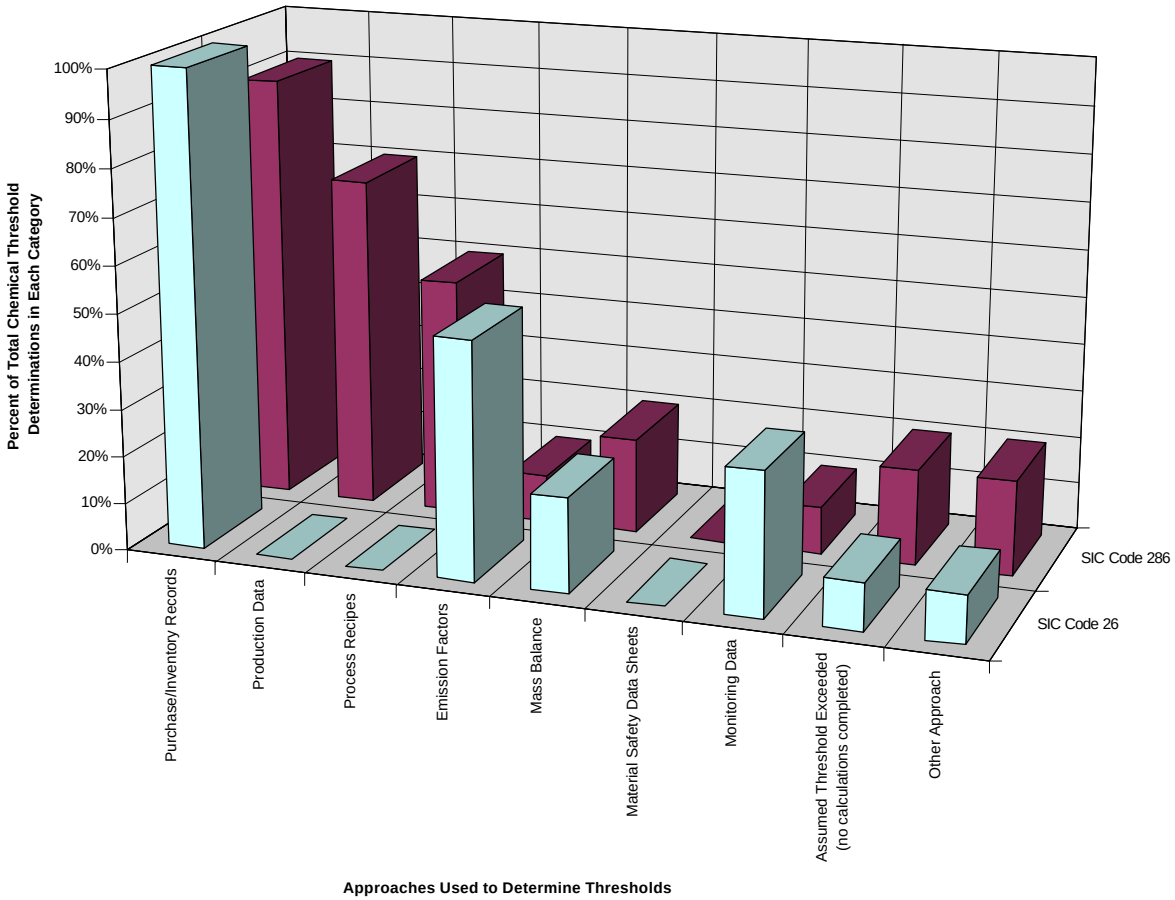
Approaches Used by Facilities to Make Threshold Determinations for RY 1994



Data for this figure can be found on Table 3-1

- Facilities primarily use purchasing records to make threshold determinations.
- Facilities in chemical manufacturing (SIC Code 281 - Inorganic Chemicals) use production data more frequently.
- Facilities in chemical manufacturing are more likely to assume thresholds are exceeded.

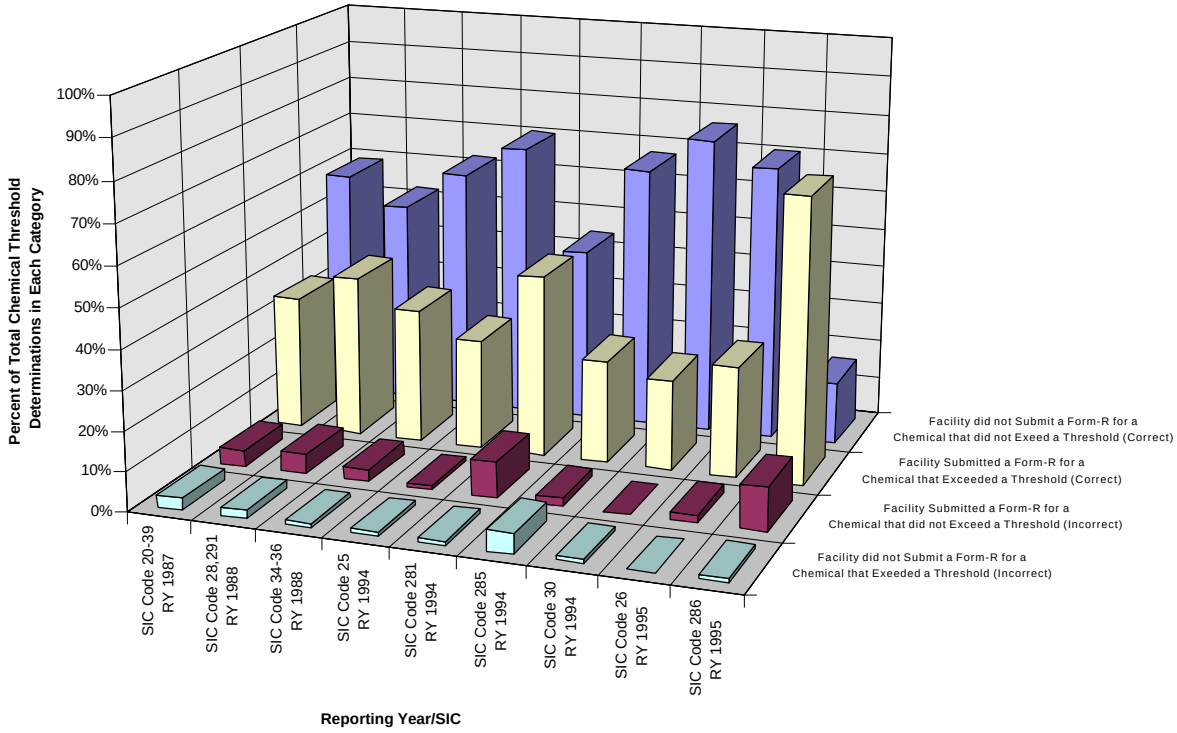
Approach Used by Facilities to Make Threshold Determinations for RY 1995



Data for this figure can be found on Table 3-1.

- Facilities primarily use purchasing records to make threshold determinations.
- Facilities in chemical manufacturing (SIC Code 286 - Organic Chemicals) use production data more frequently.
- Facilities in chemical manufacturing are more likely to assume thresholds are exceeded.

Accuracy of Threshold Determinations by Reporting Year and SIC Code

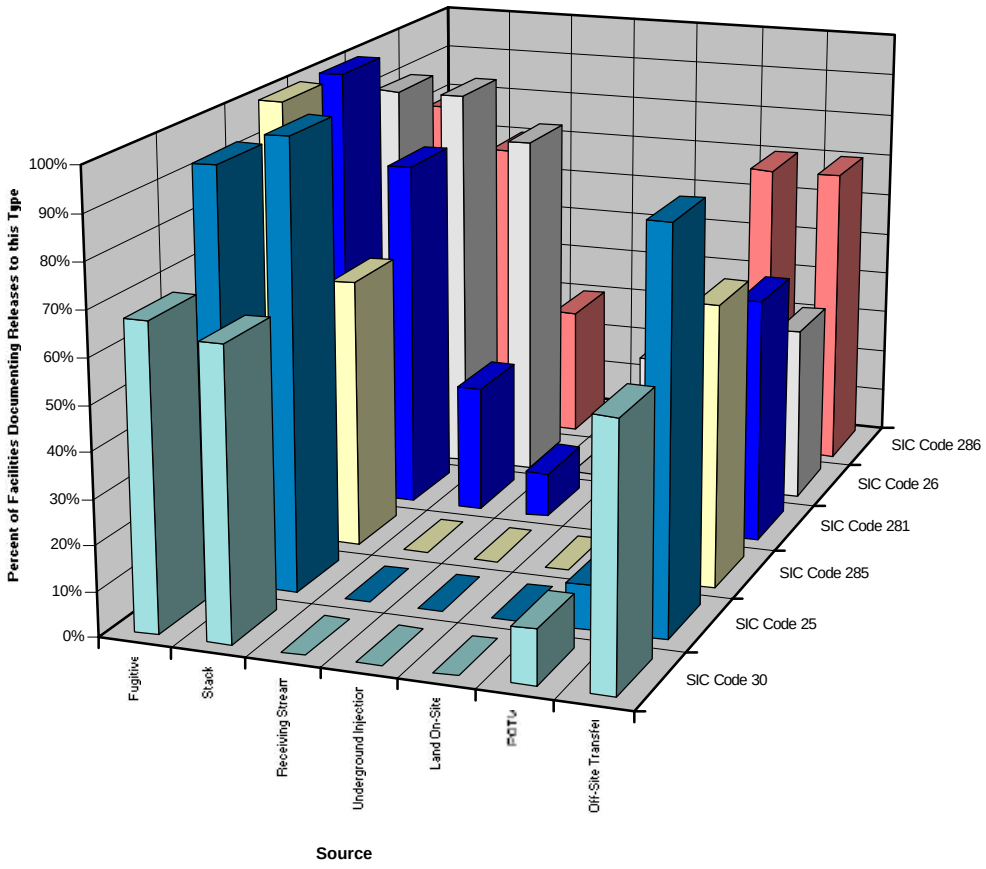


Note: The first tw o outcomes represent cases where facilities incorrectly determined thresholds, while the last two outcomes represent cases w here facilities correctly determined thresholds. Figure 3-5 compares the correct and incorrect threshold determinations by reporting year and SIC Code.

Data for this figure can be found on Table 3-2.

- Facilities generally determine thresholds correctly over 90 percent of the time.
- Errors are generally evenly split between failing to report chemicals that exceed thresholds, and reporting on those that do not.
- Facilities in inorganic and organic chemical manufacturing (SIC Code 281 and 286) had the highest error rate, primarily for reporting for chemicals that don't exceed thresholds. This may be related to tendency in these industries to assume thresholds are exceeded.

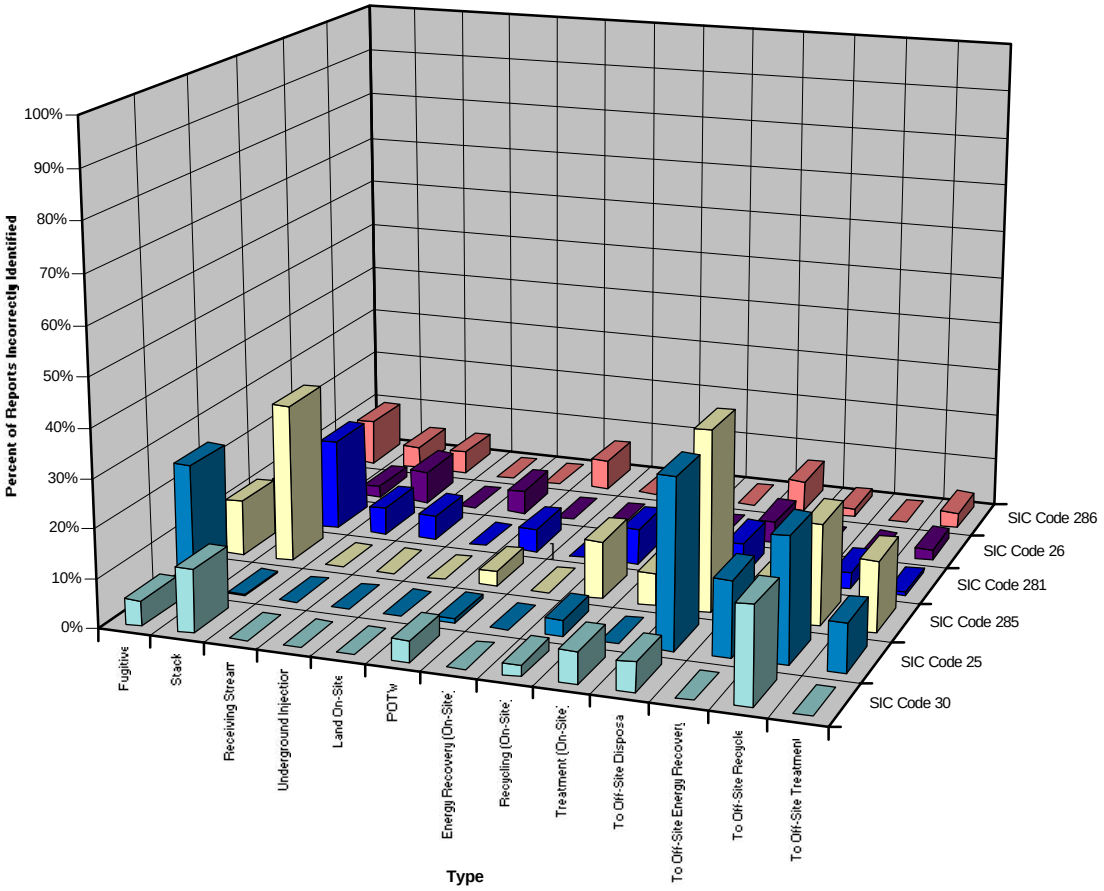
Distribution of Release and Other Waste Management Activity Types, RY 1994 and RY 1995



Data for this figure can be found on Table 4-1.

- Fugitive and stack releases and off-site transfers were observed at most facilities in all industry sectors.
- Some facilities in all industry sectors reported releases to POTWs.
- Most facilities in pulp and paper manufacturing reported releases to receiving streams.

Incorrectly Identified Release and Other Waste Management Activity Types for RY 1994 and RY 1995



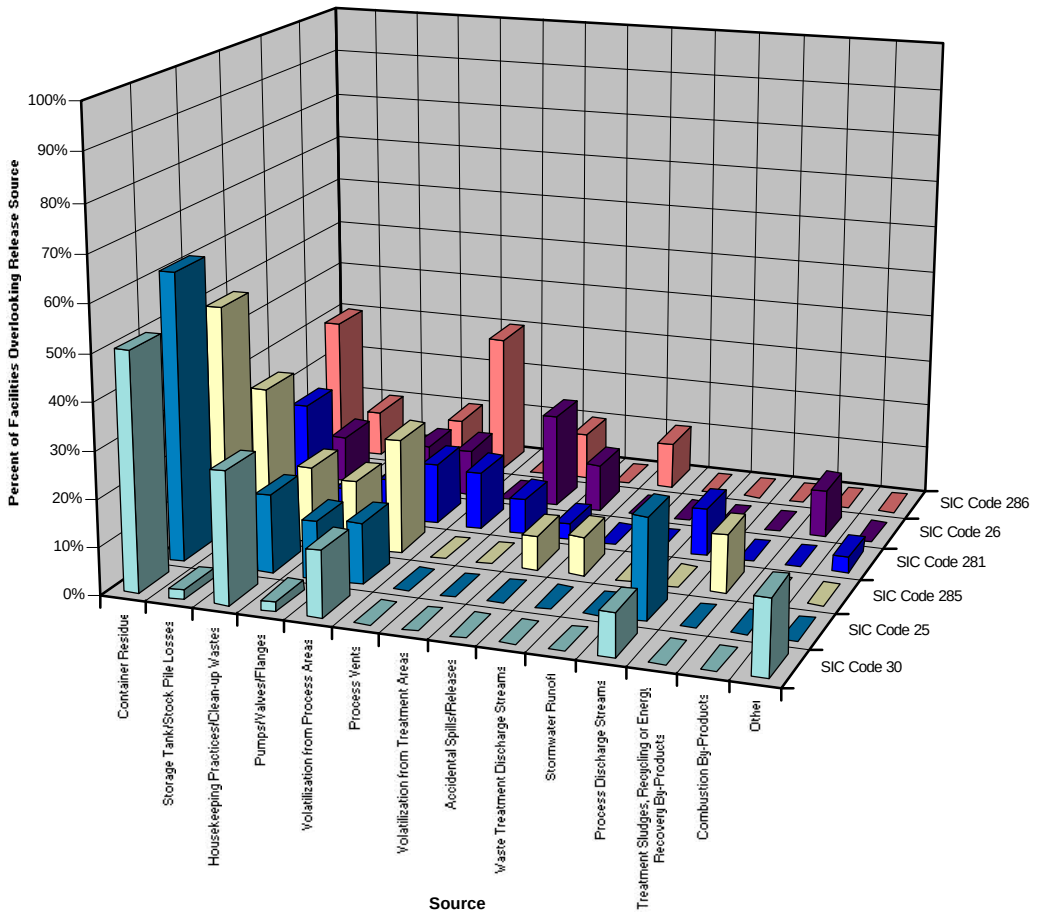
Data for this figure can be found in Table 4-2.

- Facilities often correctly identified releases and other waste management activities, but reported them to the wrong type (particularly between stack vs fugitive and between various off-site transfers).

- Quantities transferred to POTWs were correctly identified by most facilities.

- Releases to receiving streams and underground injection wells, and on-site waste management activities were rarely observed; therefore, they were rarely reported incorrectly.

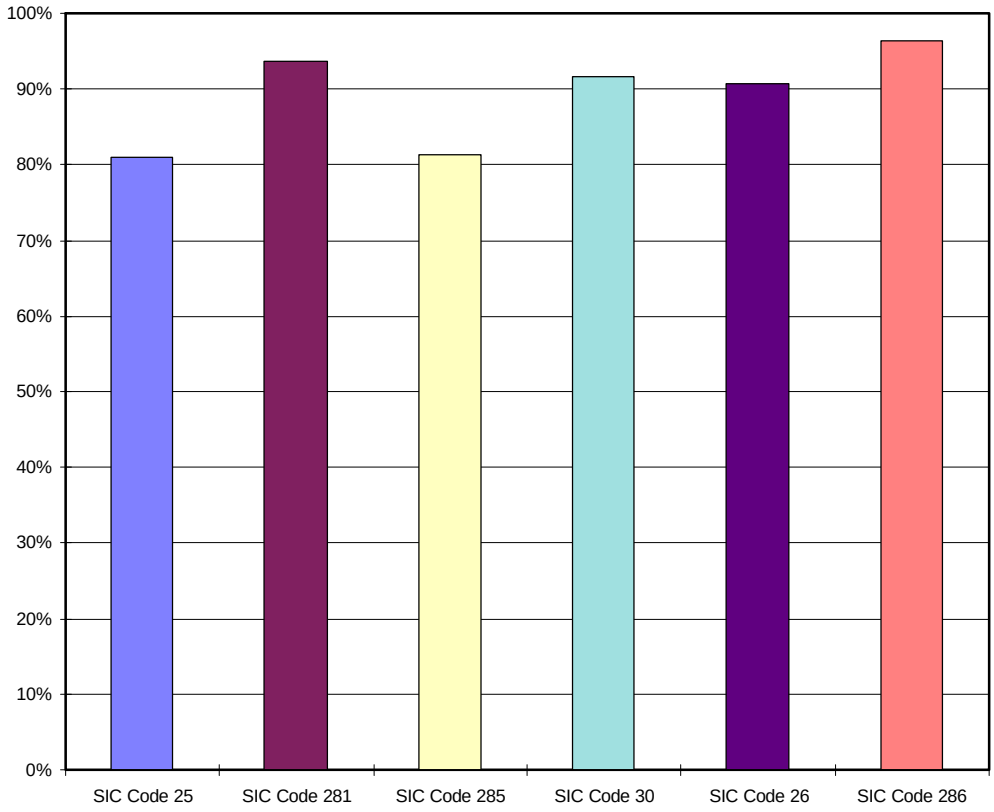
Overlooked Releases and Other Waste Management Activity Sources for RY 1994 and RY 1995



Data for this figure can be found on Table 4-3.

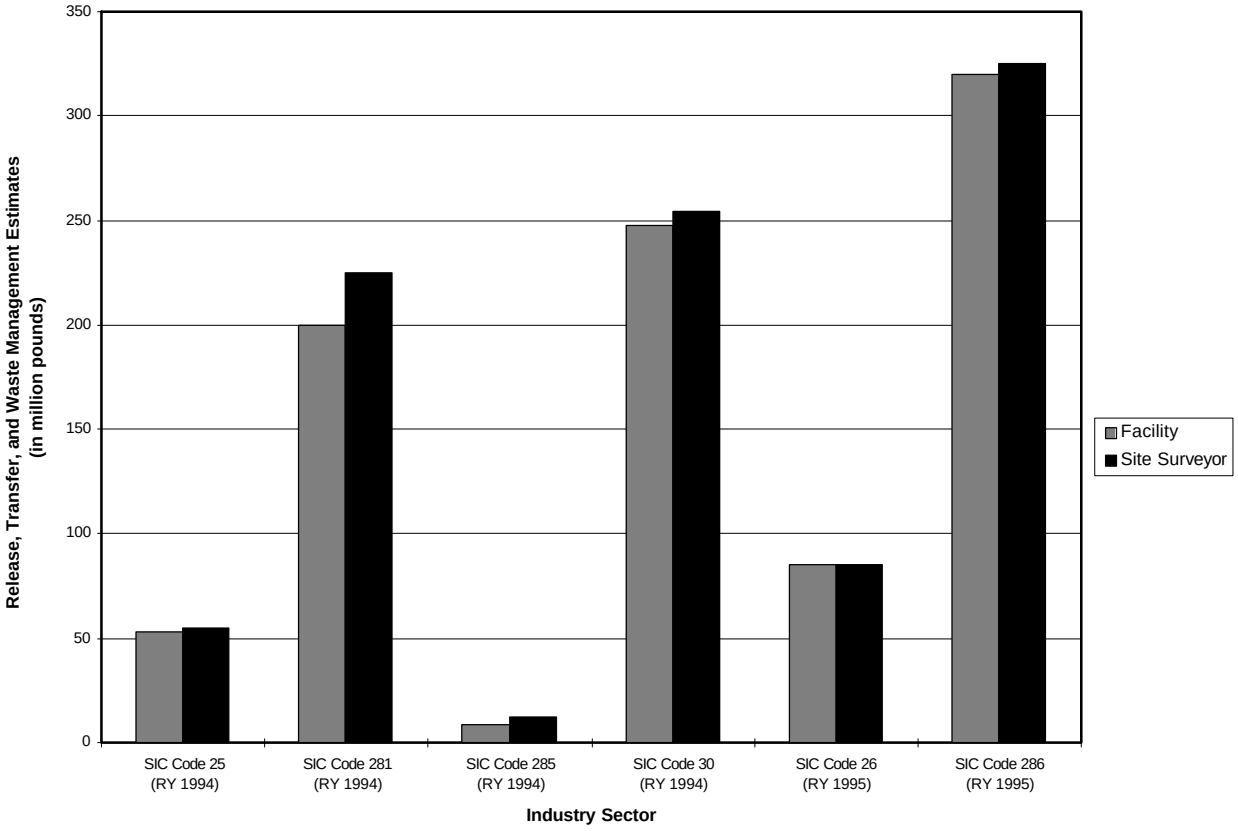
- Container residue was the most commonly overlooked release source.
- Some facilities in all industry sectors overlooked releases from container residue; pumps, valves, and flanges; and volatilization from process areas.
- A significant number of facilities also overlooked releases from storage tanks.

Frequency the Facility Used the Best Available Methodology to Estimate Releases and Other Waste Management Activities



- Most facilities in all industry sectors (greater than 80%) used an appropriate methodology to most accurately estimate releases.
- Note that this chart presents data on methodologies, and does not represent errors made in quantifying the releases.

Comparison of Facility and Site Surveyor Estimates of Total Releases and Other Waste Management Activities

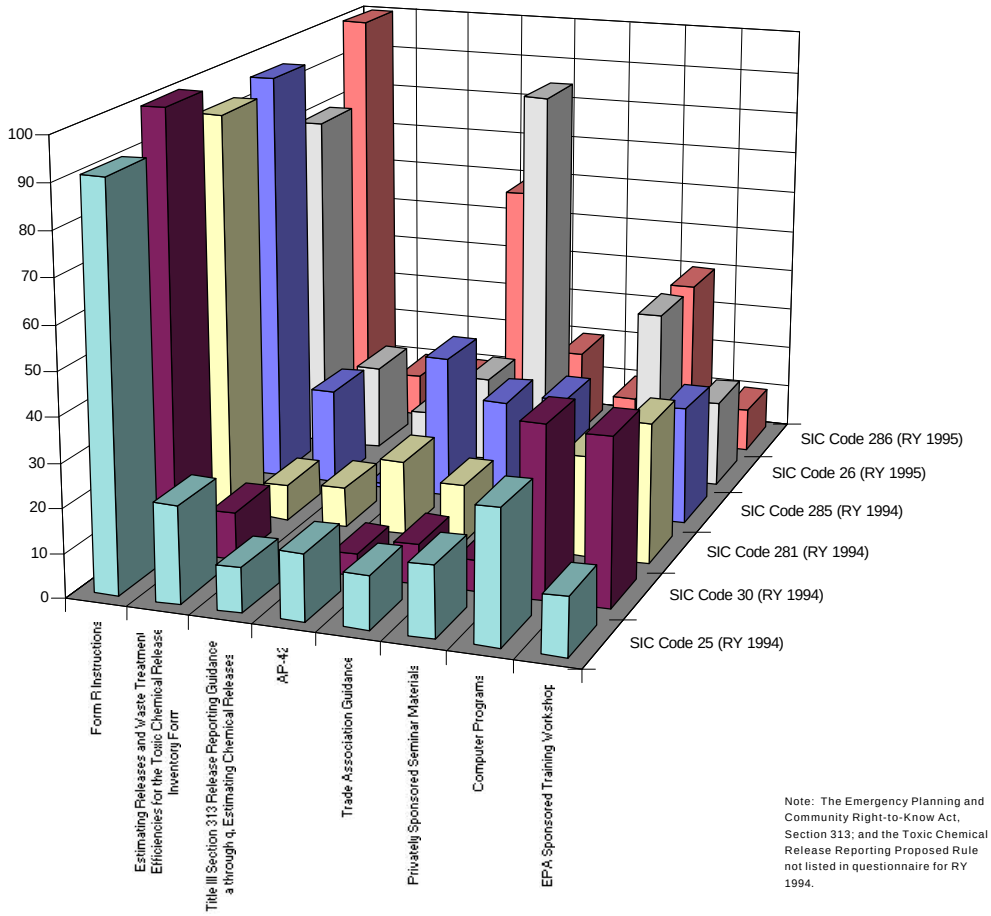


Data for this figure can be found on Tables 5-1 through 5-12.

- Facility and site surveyor release estimates were in good agreement, calculated to be within ±3% for most SIC Codes.

- Facilities in SIC Code 286, the organic chemical manufacturing industry, tended to be larger than those in the other SIC Codes surveyed, and had more quantities released and other waste management activities.

Common References Used to Compile From Rs for RY 1994 and RY 1995



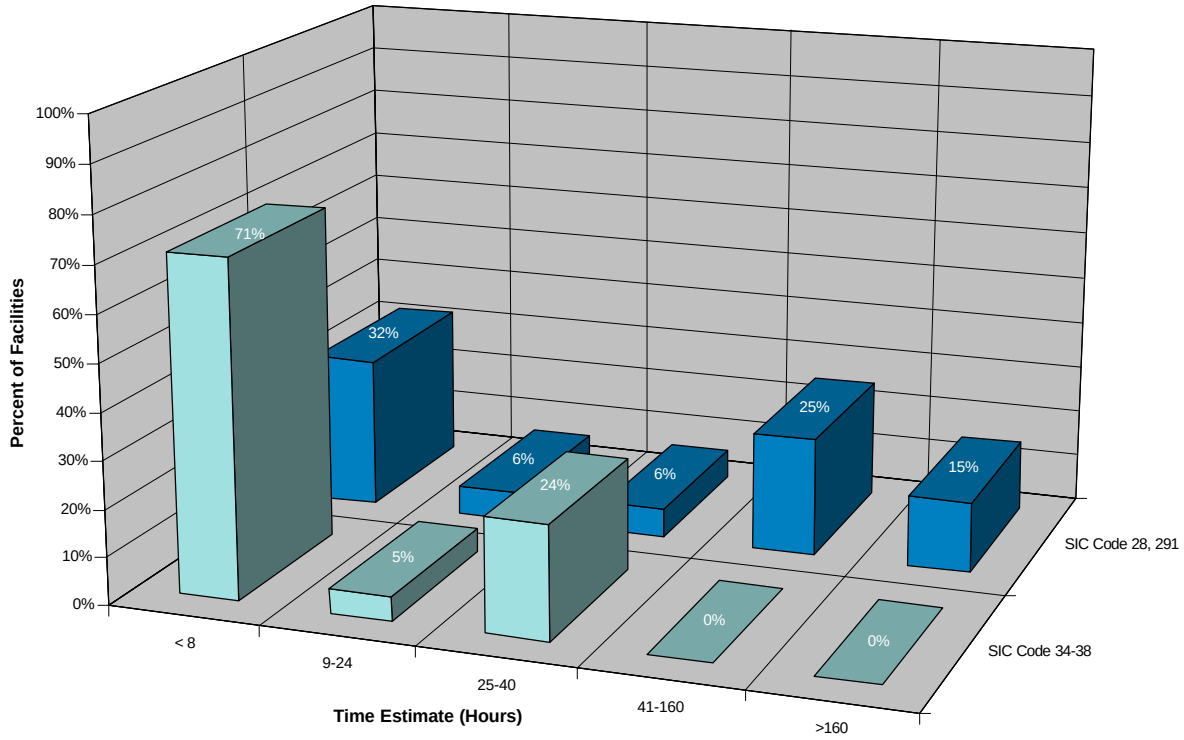
Data for this figure can be found on Table 6-3.

- Most facilities surveyed for RY 1994 and RY 1995 use the "Toxic Chemical Release Inventory Reporting Form R and Instructions" as their main reference in compiling Form Rs.

- Most facilities in SIC Code 26, the pulp and paper manufacturing industry, use trade association and NCASI guidance to complete Form Rs. Trade association guidance for this SIC Code is readily available and more detailed than the guidance generally available for facilities in other SIC Codes.

- Many facilities in SIC Code 286, organic chemical manufacturing, use AP-42 to estimate fugitive and stack releases.

Time Needed to Complete all Form Rs in RY 1988 for SIC Codes 28 and 291, and 34 - 38



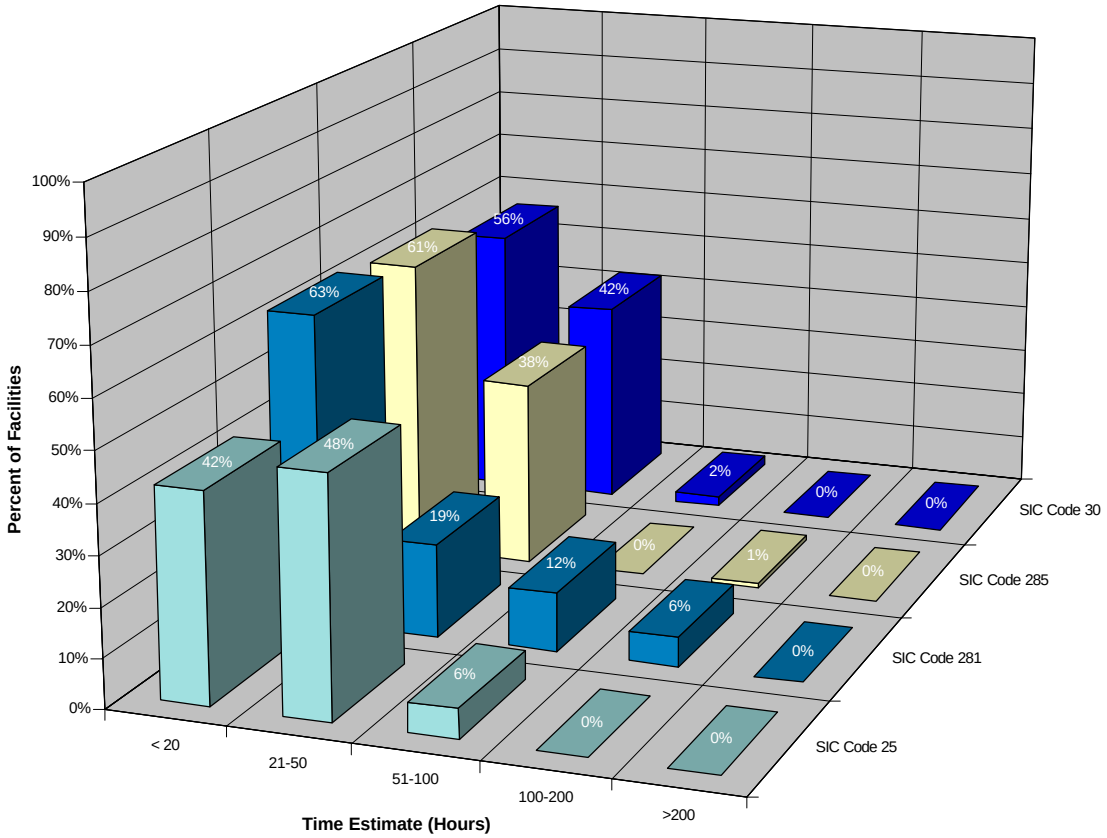
May not add up to 100% because not all facilities reported the time estimate

Data for this figure can be found in Table 6-4.

- The majority of the facilities in SIC Codes 34-38 take less than 24 hours to complete all Form Rs.

- Many facilities in SIC Code 28 are large and have many Form Rs to complete. Thus, the total time to complete all Form Rs at these facilities is more than that of other SIC Codes.

Time Needed to Complete all Form Rs in RY 1994 for SIC Codes 25, 281, 285, and 30



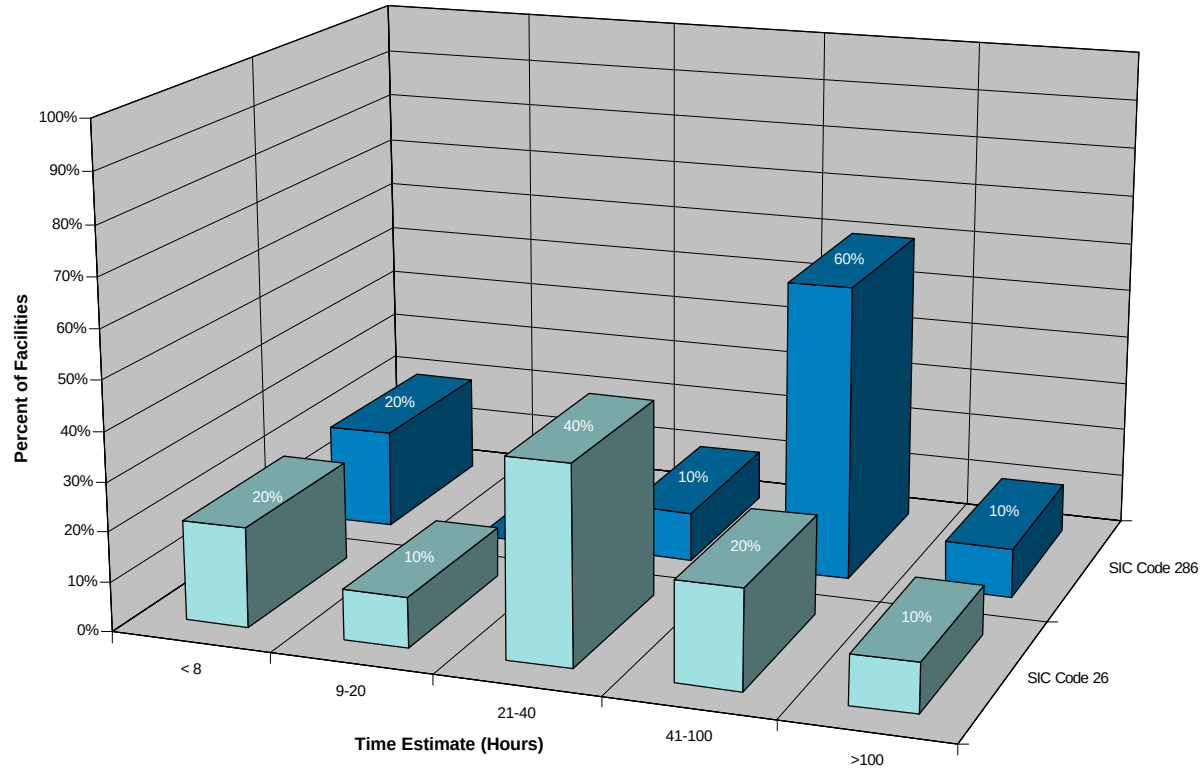
May not add up to 100% because not all facilities reported the time estimate

Data for this figure can be found in Table 6-5.

- The majority of the facilities in SIC Codes 25, 281, 285, and 30 take less than 50 hours to complete all Form Rs.

- Using the maximum of hours in the lowest range checked, the average number of hours needed to complete each Form R in RY 1994 is 11.7 hours.

Time Needed to Complete all Form Rs in RY 1995 for SIC Codes 26 and 286



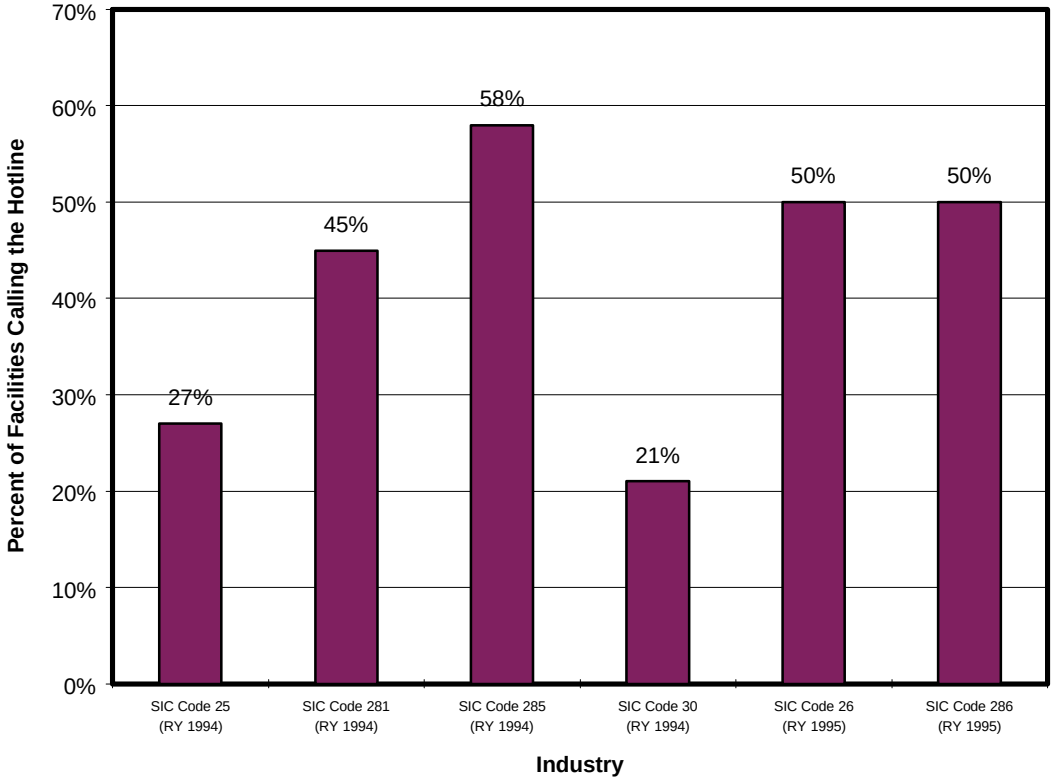
May not add up to 100% because not all facilities reported the time estimate

Data for this figure can be found in Table 6-6.

- Facilities in SIC Code 26 tended to be smaller in size and had fewer chemicals, and thus, took less time filling out Form Rs for all chemicals than those facilities in SIC Code 286.

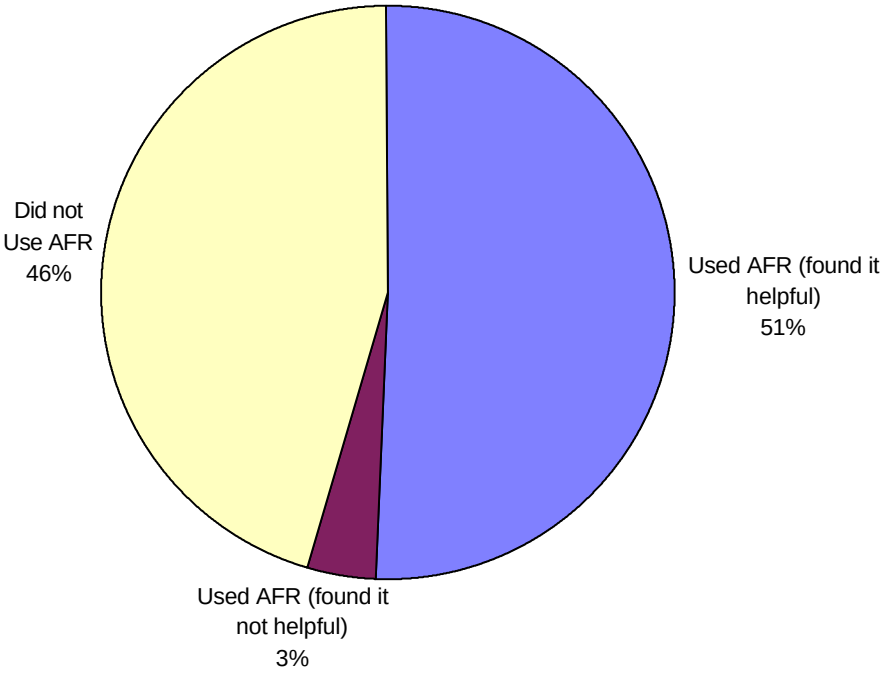
- Using the maximum number of hours in the lowest range checked, the average number of hours needed to complete each Form R in RY 1995 is 9.0 hours.

Percent of Facilities Calling the EPCRA Hotline by Industry for RY 1994 and RY 1995



- Facilities in SIC Code 25, the furniture manufacturing industry, and in SIC Code 30, the rubber and plastics industry, called the hotline less than facilities in the other SIC Codes surveyed.

Percent of Facilities Using the Automated Form R for RY 1994 and RY 1995



- Approximately half of the facilities surveyed used the automated Form R.
- Of the facilities who used the automated Form R, most found it helped to reduce reporting errors.